



2600 Bull Street Columbia, SC 29201-1708

Wisman L. 7.14.98 LOBIA 98

Monitoring Well Installation Approval Form

Date of Issue: July 17, 1997

Approval No: 8563

Approval is hereby granted to: Department of the Navy

(on behalf of): Charleston Navai Complex/Navai Base

Site Identification #: 17624

County: Charleston

This approval is for the construction of seven (7) temporary monitoring wells designated (no designation) in accordance with the construction plans and technical specifications submitted to the Department on May 19, 1997. The temporary monitoring wells are to be constructed within the surficial aquifer for the intended purpose of monitoring groundwater quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

- 1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well be submitted to Paul L. Bristol within thirty (30) days of completion (of last well(s) installed). (to be submitted with the Final Assessment Report)
- 2. Each well shall be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate shall provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #. (waived)
- 3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.
- 4. A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Ms. Christine Sanford-Coker, Trident District EQC Office (803-740-1590).
- 5. Please provide ground-water quality analytical data (chemical analysis and/or water level(s)) associated measurements (i.e., in-situ field measurements) to Paul L. Bristol within thirty (30) days of receipt from laboratory. (to be submitted with the Final Assessment Report)
- 6. Monitoring wells shall be installed by a well driller certified by the State of South Carolina.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71.

RECEIVED

JUL 16 1998

Approved by:

Paul L. Bristol, Hydrogeologist, P.G.

Groundwater Assessment & Development Section

Bureau of Water

Water Monitoring Assessment & EQC Protection Division

SOUTH CAROLINADEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Ground Water Protection Division

2600 Bull Street

Columbia, S.C. 29201

(803) 734-5331

Water Well Record

	4 OWNER OF WELL: SOUTHERN DIVISION NAVAL FACILITIES Address ENGINE COMMAND 2.155 EAGLE ORIGE NORTH CHARLESTON SC Telephone No. (843) 820-5605/7307
1. LOCATION OF WELL COUNTY: CHARLESTOP: System Name: NBCT 2007W02 3/16 ID # 17624 APPROVAL # 8463	Engineer 5.T. BEAL'S - ENVIRONMENTAL DET. CHICU Address 1899 N. GOBSON AVE NORTH CHARLESTON SC
NORTHING EASTING 2 325 062.67	Telephone No. (843) 743-6777 EXT. ZZO 5. WELL DEPTH (Completed) Date Started: 17 JUNE 1998
Distance And Direction from Road Intersections 485 NW OF INTERSECTION OF HOBSON ANG.	15.0 ft. Date Completed: \7 JUNE \ 1998
& PIRATE ST. 2224 N. HOBSON AVE.	6. Mud Rotary Jetted X Bored Dug Air Rotary Driven Cable tool Other
Street address & City of Well Location NORTH CHARLESTON SC	7. USE:
Sketch Map: (See example on back) NI3CT 2DO TWO 2 COOPER P.	Domestic Public Supply-Permit No Industry Irrigation Air Conditioning Commercial
	Test Well TEMPORARY MONITORING WELL
22 27 5. HOBRE / M	8.casing: X Threaded Welded
7 //h	Diam. 2"10 3CH. 40 Height: Above/Below Type NPVC Galvanized Surface 1.85 ft.
103×11	Steel Other Weight Ibs./ft.
HOBSON AVE	in. to _4_&ft. depth
	in. toft. depth
2. CUTTING SAMPLES Yes No	Type: SLOTTED PUC Diam 2" LD SCH. 40
Geophysical Logs Yes (Please enclose) No	Slot Gauze 0.010 Length 10 H.
FORMATION DESCRIPTION THICKNESS DEPTH TO OF BOTTOM OF	Set Between 4.8 ft. and 14.8 ft. NOTE: MULTIPLE SCREENS ft. and ft. USE SECOND SHEET
STRATUM STRATUM	Sieve Analysis Yes (Please enclose)
ASPHALT PAUEMENT 0.45' 0.45'	10. STATIC WATER LEVEL
(SH) LIGHT BROWN AND BROWN	ft. below land surface after 24 hours
FINE TO MEDIUM SILTY SAND 3-55 4.00	11. PUMPING LEVEL Below Land Surface
(OL) DARK BROWN, BLACK CLAYER	ft. afterhrs. pumping G.P.M.
ORGANIC SILT 0.2' 4.2' (CL) YELLOWISH-BROWN AND HEGINA	Pumping Test: Yes (Please enclose)
GRAY SANDY, LEAN CLAY WITH 1.1 5.3	Yield
(SP) GRAY, FINE TO MEDIUM, POURLY	12. WATER QUALITY Chemical Analysis Yes No Bacterial Analysis Yes No
GRADED SANG WITH MINOR SHELL COURSY #2.7 8.6 (CL) YELLOWISH-BROWN; SILTY/SANDY	Please Enclose Lab Results.
LEAN CLAY VERY LOW PLASTICITY *1.0 9.0	13. ARTIFICIAL FILTER (Gravel Pack) Yes No
LEAN CLAY VERY LOW PLASTICITY *1.0 9.0 (SP) GRAY, FINE TO COARSE, POORLY	Installed from 2.5 ft. to 15.0 ft.
GRADED SAND WITH 20% SHELL CONTENT *4.8' 13.8'	Effective size NO. 2 uniformity coefficient UNK.
SANDY/SILTY LEAN CLAY, TRACE * 1.24 IS.DT	14. WELL GROUTED? Yes No Neat Cement Sand Cement Concrete Other
OF FINE BRAVEL	Depth From ft. to ft.
	15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: 37 Feet 55 W Direction
	DEMONICO UST The Well disinfected Yes Type
	upon completion No Amount
	16. PUMP: Date Installednot installednotellednodel no
	H.Pvoltslength of drop pipeft. capacitygpm
	TYPE: Submersible Jet (shallow) Turbine
	Jet (deep) Reciprocating Centrifugal
Indicate water bearing zones	17. WATER WELL CONTRACTOR'S CERTIFICATION. This wall was difficult under my direction.
(use a 2nd sheet if needed)	and this report is true to the best of my knowledge and bellet. ENVIRON HENTAL 1899 N. HOBSON WE. REGISTERED DETACHHENT BUSINESS CHARLES TON ADDRESS N. CHARLESTON SC.
3 REMARKS DOWN GRADIENT MONITORING WELL	BUSINESS CHARLESTON SC. ADDRESS N.C. CHARLESTON SC.
AT FORMER UST SITE	NAME CERTING THE
	Signed C. C. ALWAY Date 11/14/93

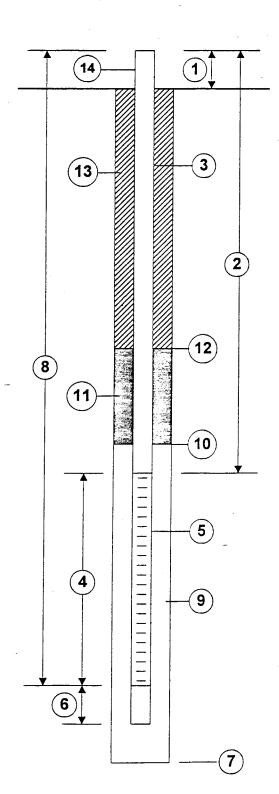
Hole No. NBCT-200-TW-02 DIVISION TON DRILLING LOG FORMER CHARLESTON NAVAL BASE SOUTH ATLANTIC OF 2 SHEETS 10. SIZE AND TYPE OF BIT 47 TA HSA, 1 36 1. PROJECT INSTALLATION OF TEMPORARY SPLITSPOON MONITORING WELLS AT BUILDING 200 FORMER UST SITE 2. LOCATION (Coordinates or Station) SEE REMARKS COLUMN (9) 12. MANUFACTURER'S DESIGNATION OF DRILL 3. DRILLING AGENCY SIMCO 2400 SR-1 CHARLESTON ENUIRON MENTAL DETACH MENT UNDISTURBED 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 4. HOLE NO. (As shown on drawing title NBCT-200-TW-02 and file number) NONE NONE 14. TOTAL NUMBER CORE BOXES 5. NAME OF DRILLER 15. ELEVATION GROUND WATER NOT DETERMINED 6. DIRECTION OF HOLE STARTED 17 JUN 98 17 JUN 98 16. DATE HOLE VERTICAL [INCLINED _ 17. ELEVATION TOP OF HOLE NOT DETERMINED > 15.0 7. THICKNESS OF OVERBURDEN 18. TOTAL CORE RECOVERY FOR BORING NA 8. DEPTH DRILLED INTO ROCK N/A 19. SIGNATURE OF INSPEÇTO CEDLOGIST ames a. Biddle 15.0 9. TOTAL DEPTH OF HOLE % CORE RECOV-ERY BOX OR SAMPLE NO. CLASSIFICATION OF MATERIAL REMARKS (Drilling time, water loss, depth weathering, etc., if significant) ELEVATION DEPTH LEGEND O'b WATER LEVEL DUILING DRILLING NOT DETERMINES ASPHALT 0.45 (SM) LIGHT BROWN AND BROWN, FINE WATER LEVEL @ 2HOURS 6.63' IN WELL CASING TO MEDIUM SILTY SAND WITH ATRACE OF FINE GRAVEL. FINE, NO GRAVEL YELLOWISH-BROWN, W/A TRACE. OF COARSE ACTUAL SAMPE DEPTH 3.5'-5.5' TW 02-1 (OL) DARK BROWN, BLACK CLAYEY ORGANIC SILT (4') (CL) YELLOWISH -BROWN AND MEDIUM SAMPLE GRAY SANDY, LEAN CLAY WITH 10-15% SILT 5.3 SP) GRAY, FINE TO MEDIUM, POORLY GRADED SAND WITH Bracsoo MINOR SHELL CONTENT TW-02 NOTE: CHANGES OF MATERIAL DEPTHS ARE APPROXIMATE AND DETERMINE FROM AUGER CUTTAKE AND SOIL REHAMING ON (CL) YELLOWISH-BROWN, SILTY/SANDY TW LEAN CLAY, VERY LOW PLASTICITY ALLER ON REMOVAL FROM BORINGS EXCEPT AT SPLITSPOON SAMPLE 02-2 (SP) GRAY, FINE TO COARSE, POORLY (8') GRADED SAND WITH 20% SHELL DEPTHS. CONTENT, FIRST INDICATION OF WATER. SAMPLE CONTINUED ON SHEET No. Z NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL

GLASSIFICATION SYSTEM.

DRILLING LOG (Cont Sheet) ELEVATION TOP OF HOLE NOT DETERMINED Hole No. NBCT-200-TW-02 PROJECT IN STALLATION OF TEMPORARY MODITORING INSTALLATION SHEET FORMER CHARLESTON NAVAL BASE WELLSAT BLOG. 200 FORMERYST SITE OF & SHEETS BOX OR SAMPLE NO. % CORE RECOV-REMARKS CLASSIFICATION OF MATERIALS (Drilling time, water loss, depth of weathering, etc., if significant) DEPTH LEGEND ELEVATION (Description) ERY 10'ь f (SP) CONTINUED FROM SHEET NO ! 12' (CL) YELLOWISH-BROWN ANDGRAY SAUDY/SILTY LEAN CLAY, TRACE OF FINE GRAVEL BORING TERMINATED AT 15.0'

WELL CONSTRUCTION DETAILS

FORMER CHARLESTON NAUAL BASE BUILDING 200 FORMER UST SITE INVESTIGATION



WELL NUMBER NBCT-200-TW-02

DATE OF INSTALLATION OG/17 /98

INSTALLED BY CHARLESTON ENUMERITAL

DET. TANK SECT / J. BIODLE

1. Height of Casing above ground
2. Total lenght of Riser pipe6.65'
2"ID SCHEDULE 40 3. Type of Riser pipe FLUCH THEED PUL.
4. Lenght of Screen 10.0
5. Type of Screen THREAD. O. 010" SLOT SIZE
6. Lenght of Sump PORTION OF SCREEN)
7. Depth of Boring
8. Depth to Bottom of Screen 14.8" "DRILLERS SERVICES"
9. Type of filter pack No. 2 FIDER PACK SAND
Quanity Used 325 Lbs.
Size 10-30 SCREEN SIZE
10. Depth to Top of Filter Pack 2.5' "SHUL PEL" 1/2" BENTONITE
"SHUR PEL" 1/2" BENTONITE
11. Type of Seal PELLETS Quanity Used 75 Lbs.
12. Depth to Top of SealO.6'
13. Type of Grout
Grout Mixture N/A
Method of Placement

14. Type of Well Protection NONE ATTHIS TIME
Concrete Cap to be poured to Asphalt
Surface.
COMMENTS:
Water level at 2 Hours: 6.63 bgs.
Secured w/ Locking well Cap.

ib 6/18/98

DEPARTMENT OF HEALTH A SOUTH CAROLIN

ENVIRONMENTAL CONTROL

Ground Water Protection Division

2600 Bull Street

Columbia, S.C. 29201

(803) 734-5331

Water Well Record

1. LOCATION OF WELL	4 OWNER OF WELL: 500 THEEN DIVISION NAVAL FACILITIES Address ENGINEERING COMMANU 2155 EAGLE DRIVE NORTH CHARLESTON SC Telephone No. (843) 820-5600/7307
County CHARLESTON System Name NBCT 2007 W03 SITE 10 # 17624 APPROVAL # 8563 NORTHING EASTING Linguist 371 364.85 Longwide 2 325 044.16	Engineer Address 1899 N. HOBSON AVE NORTH CHARLESTON SC Telephone No. (843) 743 - 6777 EXT 220 5. WELL DEPTH (Completed) Date Started: 17 JUNE 1998
Distance And Direction from Road Intersections 447 WWW OF THE INTERSECTION OF HOBSON AVE 8 PIRATE ST. 2224 S. HOBSON AVE. Street address & City of Well Location NORTH EHARICSTON SC	17.0 ft. Date Completed: 17 JUNG 1998 6. Mud Rotary Jetted Bored Dug Air Rotary Driven Cable tool Other 7. USE:
Sketch Map: (See example on back) Sizzer Hobson Ave	Domestic Public Supply-Permit No. Industry Irrigation Air Conditioning Commercial Test Well TEMPORARY MONITORING WELL 8. CASING: Threaded Welded Diam. 2" 10 Scit. 40 Height: Abovy Below Type PVC Galvanized Surface J.40 ft. Steel Other Weight Ibs./ft. 2 in. to 4.5 ft. depth Drive Shoe? Yes No in. to ft. depth
2. CUTTING SAMPLES Yes No	9. SCREEN: Type: SLOTTED PUC Diam 2"10 SEH. 40
Geophysical Logs Yes (Please enclose) No FORMATION DESCRIPTION FORMATION DESCRIPTION FORMATION DESCRIPTION OF BOTTOM OF STRATUM STRATUM 4.0' (SP) LIGHT BROWN AND YELLOW-OILANGE	Step Betweenft. andft. NOTE: MULTIPLE SCREENSft. NOTE: MULTIPLE SCREENSft. USE SECOND SHEET Sieve AnalysisYes (Please enclose)No 10. STATIC WATER LEVELft. below land surface after 24 hours
PINE POORLY GRADGO SAND WITH 0.6 4.6 15% SILT 0.6 4.6 (SC) NEDIUM GRAYISH-BROWN, FINE CLATEY SAND 1.1 5.7 (SP) MEDIUM BROWN, FINE TO MEDIUM	11. PUMPING LEVEL Below Land Surface ft. afterhrs. pumping G.P.M. Pumping Test: Yes (Please enclose) No Yield
GRAINGD, POORLY GRADED SAND # 2.3 8.0 (SC) DARK GREENISH-BROWN, FINE TO MEDIUM CLAYEY SAND # 5.0 13.0 (OLIOH) DARK GRAY, HIGH LIQUID LIMIT ORGANIC SILT, SEMI-PLASTIC # 2.0 15.0	12. WATER QUALITY Chemical Analysis Yes No Bacterial Analysis Yes No Please Enclose Lab Results. 13. ARTIFICIAL FILTER (Gravel Pack) Yes No
OH) DARK GRAY, HIGH LIQUID LIMIT / ORGANIC CLAY, PLASTIC #2.0+ 17.0+	Installed from 2.1 ft. to 17.0 ft. Effective size NO. 2 uniformity coefficient NNK. 14. WELL GROUTED? Yes No Neat Cement Sand Cement Concrete Other Depth From ft. to ft.
	15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: 55 Feet NNW Direction REMOVED UST Type Well disinfected Yes Type upon completion No Amount not installed not installed
	Mfr. namemodel no H.Pvoltslength of drop pipeft. capacitygpm TYPE: Submersible Jet (shallow) Turbine Jet (deep) Reciprocating Centrifugal
(use a 2nd sheet if needed) 8. REMARKS UPGRADIENT MONITORING WELL AT FORMER UST SITE WATER GUCONTERGO AT 7 DEPTH EC # 1903 (10/86) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH A	TO ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

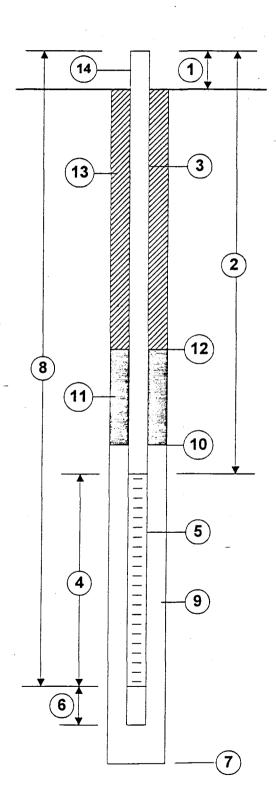
Hole No. N BCT-200-TW-03 DIVISION DRILLING LOG SOUTH ATLANTIC CHARLESTON NAVAL BASE (FORMER) SHEETS 1. PROJECT INSTALLATION OF MONITORING WELLS AT 10. SIZE AND TYPE OF BIT 44 "TO HOLLOW STEM AUGER, 1% 11. DATUM FOR ELEVATION SHOWN (TBM & MSL) ID SPLITS BUILDING ZOO, FORMER UST SITE 2. LOCATION (Coordinates or Station) SEE REMARKS COLUMN (9) 12. MANUFACTURER'S DESIGNATION OF DRILL 3. DRILLING AGENCY SIM CO 2400 SR-1 CHARLESTON ENVIRONMENTAL DETACHMENT TANK SECT. 13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED UNDISTURBED 4. HOLE NO. (As shown on drawing title NBCT - 200 - TW - 03 NONE 14. TOTAL NUMBER CORE BOXES NONE S. NAME OF DRILLER 15. ELEVATION GROUND WATER NOT DETERMINED 6. DIRECTION OF HOLE STARTED COMPLETED 16. DATE HOLE 17 JUN 98 17 JUN 38 XVERTICAL ___INCLINED_ DEG. FROM VERT. 17. ELEVATION TOP OF HOLE NOT DETERMINED 7. THICKNESS OF OVERBURDEN > 17.0 18. TOTAL CORE RECOVERY FOR BORING B. DEPTH DRILLED INTO ROCK N/A 19. SIGNATURE OF INSPECTOR James O. Biddy GEOLOGIST 9. TOTAL DEPTH OF HOLE 17.0 % CORE BOX OR REMARKS CLASSIFICATION OF MATERIAL (Description) (Drilling time, water loss, depth of weathering, etc., if significant) ELEVATION DEPTH LEGEND NO. ERY О'ь (SM) BROWN, FINE SILTY SAND WATER LEVEL DURING DRILLING: 7.0' LIGHT BROWN WATER LEVEL AFTER I HOUR G.42' HOUR NOTE: EXCEPT FOR SPLITSPOON SAMPLE INTERVALS, DEPTHS FOR CHANGE OF MATERIALS ARE APPROXINATIONS BASED ON SOIL CUTTINGS AND SOIL ON YELLOWISH-BROWN, 10% CLAY AUGEL OF WITH DRAWAL FIRST PUSH DIDNOT PRODUCE DARK BROWN, ORGANIC SANDLE ONE 2" DAMETER. PIECE OF GRAVEL LOGGED IN SHOE TW TEXTURE, APPEARANCE 03-1 BUILDING (SP) LIGHT BROWN AND YELLOW-DRANGE (4) 200 F. POORLY GRADED SAND WITH 15% SAMPLE HOBSON (SC) MEDIUM GRAYISH-BROWN, FINE CLAYEY SAND (SP) MEDIUM BROWN, FINE TO MEDIUM GRAINED, POORLY GRADED SAND WATER WITH DRILL CUTTINGSAT 7.0' FIRST INDICATION OF WATER (SC) DARK GREENISH - BROWN, FINE TW TO MEDIUM CLAYEY SAND 03-Z (8) SAMPLE 10 12' CONTINUEDON SHEET NO. 2 NOTE: SOILS VISUALLY FIELD CLASSIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM.

MOJECT TN: BUILDING	STALLATI	ON OF M	U ST	REVATION TOP OF HOI NOT DETERM V6 WELLS AT SITE CLASSIFICATION OF (Description	FORMER CHA	% CORE	NAVAL	Важ	NBCT-200 SHEET OF 2.	2
ELEVATION	DEPTH	LEGEND		CLASSIFICATION OF	MATERIALS	% CORE				346E12
	12'b	c	I	,	m)	RECOV-	SAMPLE NO.	(Drilling time	e, water loss, a etc., if signific	lepth of
		·		<u>d</u>		e	f		<u>g</u>	
			(SC)	CONTINUES FR	om sheetho. 1					
		999								•
	-	11/1	(OL/OH	DARK GRAY,	HIGH LIQUE SEMI-PLASTIC	1		STRONG HY	DROGEN SC	u-FIST
			LIMIT	ORCANIC SILT,	SEMI-PLASTIC			ODOR		
	14	1//								
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	3		(OH)	DARK GRAY, HI	GH LIQUIDLINIT					
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WELL CONSTRUCTION DETAILS

FORMER CHARLESTON NAVAL BASE BUILDING 200 FORMER UST SITE INVESTIGATION



WELL NUMBER NBCT - 200-TW-03

DATE OF INSTALLATION 06/17 /98

INSTALLED BY CHARLE SEW ENVIRONMENTAL

DETACHMENT TANK SECTION / J. BIDDLE

1. Height of Casing above ground
2. Total lenght of Riser pipe 5.9
2 15 SCHEDULE 40.FLUSH
3. Type of Riser pipe THREAD PUL
4. Lenght of Screen 10.0' 2" ID SCHEDULE 40 PUC
5. Type of Screen O.OIO" SLOTTED 0.5' (INCLUSES 0.3'UN SLOTTED
0.5' (Includes 0.3'LIN SLOTTED
6. Lenght of Sump PORTION OF SCREEN
7. Depth of Boring 17.0
7. Depth of Boring 17.0 Diameter of Boring 7.75" NOMINAL
8. Depth to Bottom of Screen 14.5
DEILLERS SERVICES NO. Z
9. Type of filter pack FILTER SAUD.
Quanity Used 400 Lbs Size 10-30 SCREEN SIZE
10. Depth to Top of Filter Pack 2.1' "SHUL PEL" //z" BENTAUTE 11. Type of Seel PELLETS
"SHUR PEL" /Z" BENTOUTE
11. Type of Seal PELLETS
11. Type of Seal PELLETS Quanity Used 60 Lbs.
12. Depth to Top of SealO.5'
13. Type of GroutNONE
Grout MixtureMA
Method of Placement N/A
14. Type of Well Protection NONE ATTHIS TIME

COMMENTS:

WATER LEVEL, I HOURAFTER INSTALLATION: 6.42'.

SOUTH CAROLINA DEPARTMENT OF HEALTH A **ENVIRONMENTAL CONTROL**

Ground Water Protection Division

2600 Bull Street

Columbia, S.C. 29201

(803) 734-5331

Water Well Record

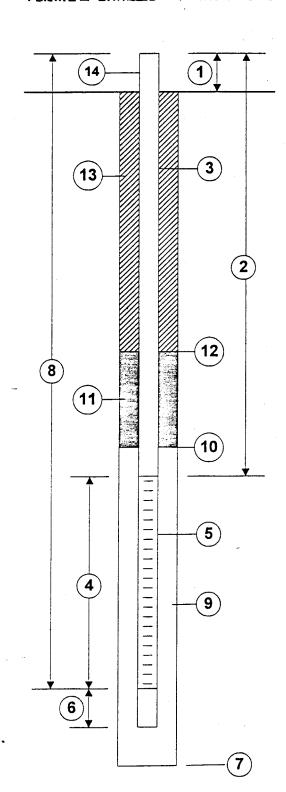
		4. OWNER OF WELL: S Address E	NGINEERIN	DIVISION NA S. COMMAND S. DRIVE ARLESTON SC COL 7307	
1. LOCATION OF WELL		Telephone No. (643) Engineer 5	820-560 BEALE	O/7307 ENVIRONMEN	TAL DET CHASE
County CHARLESTON System Name: NBI	17624	Address 19 9	19 N. HOB		Books (1996)
NORTHING EASTING	8565	Telephone No. (8	43) 743-	6777 EXT. 7	
371350.59 Lutilia 23	25 032 - 25	5. WELL DEPTH (Com		Date Started: 7) Date Completed: 7	•
475 WNW OF INTERSECTION OF NOTES PIRATEST	ie horson	6. Mud Rotary	Jetted	X Bored	Dug
2274 5. 110	1	Air Rotary 7. USE:	Driven	Cable tool	Other
Street address & City of Well Location NORTH CHAI Sketch Map: (See example on back)	N	☐ Domestic		y-Permit No.	
Sketch Map: (See example on back)	PER	☐ Irrigation ☐ Test Well	Air Condition	ning KARY MONITO	Commercial RING WELL
Sketch Map: (See example on back)	PREK RIVER	8.casing: Threaded	Welded		
	5	Diam. 2" ID St	,	Height: Above/Be Surface 2.58	
HOBSON AVE.		Steel	Other	Weight	lbs./ft.
10E		2 in. to 5.1	- ;	Drive Shoe? [Yes 🔀 No
2. CUTTING SAMPLES Yes No		9 SCREEN:		2 " 15	COU HO
Geophysical Logs X Yes (Please enclose)	No	Slo / Gauze	0.010	Diam 2" IC	ft.
FORMATION DESCRIPTION (KNESS DEPTH TO DF BOTTOM OF	Set Between	ft. and ft. and		MULTIPLE SCREENS COND SHEET
STR	atum - stratum	Sieve Analysis	es (Please enclos		
ASPHALT PAVEMENT O	-35' 0.35'	10. STATIC WATER LE	EVEL below land surfac	e after 24 hours	
(SM/SP) FINE TO MEDIUM SILTY SAND WITH SOME SILT, CLAY AND FINE GRAVEL TAN TO LT. BROWN	.65 2.01	11. PUMPING LEVEL			
(SM) DARK BROWN, FING, SILTY			afterhr		G.P.M.
(SP) DARK GRAY, FINE, POORLY	.05 3.05	Pumping Test:	Yes (Please enclos	e) 🔀 No	
CL) LIGHT BROWN, SANDY LEAN	.55 3.60'	Yield 12. WATER QUALITY			
and the contract of the contra	4' 10.0'	Chemical Analysis	_ ,	Bacterial Analysis	∏Yes X No
(SP) GRAY, FINE TO MEDIUM, POORLY GRADED SAND WITH IS SO SILT - SATURATED	0.5' 10.5'	Please Enclose Lab F		XYes No	
(OL/OH) DARK BROWNISH-GRAY.		Installed from 3.		to 1.7.0	_ft. UNK.
HIGH LIQUID LIMIT ORGANIC SILT/CLAY, MEDIUM PLASTICITY * 6	5-5+ 17.0+	14. WELL GROUTED?		Homity coefficient	
		Neat Cement [S	and Cement 🔲	Concrete Other	· 🗆
		Depth From			
		15. NEAREST SOURCE O	Type Well d	isinfected 🔲 Yes Ty	/pe
			upon	completion 🔀 No An	nount
		16. PUMP: Date Install		not in	
		H.Pvolt	slength (of drop pipeft. c	apacitygpm
		TYPE: Submersibl	e ☐ Jet (sl		
Mindicate water bearing zones		17. WATER WELL CONTR.	ACTOR'S CERTIFIC	ATION: This well was dr	illed under my direction
(use a 2nd sheet if needed)		end this report is true to the REGISTERED SUSTANDARY BUSINESS	OUNCATED OUNCEDIAL OUNCEDIAL	ge and pallet. 1699 N.	HOBSON NE.
3 REMARKS SOURCE AREA WELL AT	FORMER	BUSINESS CHARL	eston,	_ ADDRESS N. CH	AKLESTON SC
UST SITE		Signed C. E. St.	iths	CERT NO 17/ Date 1/19/19	8
WATER ENCOUNTERED AT 8'			PRESENTATIVE ONTROL (ADDRES	•	

DIVISION		INST	TION		11914 110.	NBCT-200-			
	ATLANTIC (USACE)			LLESTON	NAVAL BASE	OF 2 SHEETS			
PROJECT INSTALLATION OF	TEMPORARY MONITORING				44" ID HOLLOW ST				
VELLS AT BUILDING 200 FO	RMER UST SITE	11. DAT	IM FOR EL	EVATIO	SHOWN (TBM or MSL)	ID SPLITSPOON			
LOCATION (Coordinates or Station)	<u> </u>								
SEE REMARKS COLUMN (9)	,	_			GNATION OF DRILL				
DRILLING AGENCY CHARLESTON ENVIRONMENTAL	DETACHMENT (TANK SECT)	SIMCO 2400 SR-1							
HOLE NO. (As shown on drawing title	r	13. TOTAL NO. OF OVER- DISTURBED UNDISTURBED BURDEN SAMPLES TAKEN 2 NONE							
and file number)	NBCT-200-TW-01	-				NONE			
NAME OF DRILLER			AL NUMBE						
		15. ELE	ATION GE		TER NOT DETERM				
DIRECTION OF HOLE		16. DATE HOLE TAN 98 17 Jun 98							
VERTICAL INCLINED	DEG. FROM VERT.			1					
THICKNESS OF OVERBURDEN	>17.0'				LE NOT DETERM				
DEPTH DRILLED INTO ROCK	N/A					/ <u>A</u> %			
TOTAL DEPTH OF HOLE	17.0		ature of nes <i>G</i>			GEOLOGIST			
			% CORE	BOX OR	REMAR				
LEVATION DEPTH LEGEND	CLASSIFICATION OF MATERIAL (Description)	LS		SAMPLE NO.	(Drilling time, water	er loss, depth of			
a O'b c	<u> </u>		•	10.	weathering, etc.,	ergraticetto			
0.35' AS	PHALT				WATER LEVEL	@ 8.0' DURMG			
	SP) FINETO MEDIUM SICT H SOME SICT, CLAY AND E				DRILLING.				
GRA	WEL , TAN TO LIGHT BROWN	VARIES			WATER LEVEL (2 HOURS. (IN WI				
	Poorly Graded Sano . APF Be Fillmaterial	CHRS			NOTE: AT 1.0				
- 				ļ	I PPM.				
2' -	Don Don de la company				N				
(SM)	DARK BROWN, FINE, SIL	RE			i				
	APPEARANCE	j							
3.05	000 V COA! Fire Coas	, 			BLOG ZOO				
L::::::: GRA	DARK GRAY, FINE, POORL	7		TW OL-1	И	\sim			
3.6' (C1)	LIGHT BROWN, SANDY	LEAN				/ *			
	Y, FINE SAND FRACTION		·	(4)	, 1				
		ł							
	TRACES OF MEDIUM AND	CARLE				1W-01			
SAL	9 0	}				(Source)			
1, 7///		İ							
6 - 1///					40				
					HOS SON PULL				
					180				
					13/2				
		Ì							
8'						•			
" / / /		İ	ļ		- WATED DO: 8.0	•			
1///		l			SLIGHT FUEL O	DOR			
				TW					
		1		01-2					
7///		1		(8')	NOTE: EXCEPT FOR	SPLITSPOON			
/0' (SP) G	RAY FINE TO MEDIUM, P	20001		SAMPLE	SAMPLE IN TERVA	L, DEPTHS			
_, Tiiiiiiiiii Grac	ED SAND WITH 15% SIL	ur,			FOR CHANGES OF ARE APPROXIMA				
	L FRAGMENTS, SATURAT H) DARK BROWNISH - GRAY				AN DRILL CUTTI	NGSAND SOIL			
LIQUIE	SLIMIT ORGANIC SILT/				ON AUGER ON L	U ITH PRAWAC			
MEDI	UM PLASTICITY				FROM BORING.				
		ſ	1	^					
			<u> </u>						
CONT	INUED ON SHEET NO. 2								
		, 1							
	E: SOILS VISUALLY FIELD		į						
	SSIFIED IN ACCORDANCE	}	}						
	H THE UNIFIED SOLL	l	į						
	SSIFICATION SYSTEM.		1						
	·····								
		1							

DRILLING	LOG	(Cont S	heet)	ELEVATION TOP OF HO	DLE WED			Hole No.NA	3CT-200-TW-01
PROJECT TE	PORAR	Y MOUIT	PARING	WELLS AT	INSTALLATION				SHEET 2
BUILDIN O	DEPTH	LEGEND	LUST	CLASSIFICATION O			BOX OR	REN (Drilling time, 1	OF & SHEETS NARKS vater loss, depth of, if significant)
<u>a</u>	12'b	С		d		e	f		g
			SHE	04)(CONTINUE ET) DARK BRO ANIC SILT AN	d Erom Previous wo ish -gray vo quay .			BORING DEIGHTO 15.0'. DUE TO 6 17.8' DUE TO 6 14.4'EDIAL IN AUGER.	ER BORED TO EXCESSIVE
	14'-								
	16'-							-	
	17'								
	=		BORN	NG TERHINATED	AT 17.0'				
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WELL CONSTRUCTION DETAILS

FORMER CHARLESTON NAVALBASE BUILDING 200 FORMER UST INVESTIGATION



WELL NUMBER NBCT-200-TW-01

DATE OF INSTALLATION 06/17/98

INSTALLED BY CHARLESTON ENVIRON REUTAL DET

TANK SECTION / J. BIQULE

- 1. Height of Casing above ground 2.58
- 2. Total length of Riser pipe 7.68'
- 3. Type of Riser pipe FLUSH THREAD PVC
- - 2"ID SCHEDULE 40 "
- 5. Type of Screen FLUSHTHREAD DVC. 0:010SLOT

 0.5' (INCLUSES 0.3' 4N\$LOTTED
- 6. Lenght of Sump PORTION OF SCREEN.
- 7. Depth of Boring 17.0'

 Diameter of Boring 7.75"Nominal
- 9. Type of filter pack FILTER SAND

 Quanity Used 375 Lbs

 Size 10-30 SCREEN SIZE
- 10. Depth to Top of Filter Pack 3.0'
 "SHUR PEL" 1/2" BENTON TE
- 11. Type of Seal PELLETS

 Quanity Used 75 Lbs.
- 12. Depth to Top of Seal O.4'
- 13. Type of Grout NONE

 Grout Mixture N/A

 Method of Placement N/A
- 14. Type of Well Protection NONE AT INSTALLATION CONCRETE CAP TO BE POURED TO ASPHALT SURFACE.

COMMENTS:

Water Level 7.00' bgs @ 2hours after well installation.

Secured with Locking well cap.

ib 6/18/98